

Calculation of the composition of the equilibrium dusty plasma

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Abstract

We consider the equilibrium dusty plasma consisting of neutral atoms of the gas, the gas ions, free electrons and charged dust particles. We obtained the generalized Saha-equation for equilibrium dusty plasmas. In the approximation of a rectangular potential well at the surface of dust grains are calculated charge of the dust particles, the concentration of ions and electrons. It is shown that depending on the basic parameters of the plasma charged dust particles can be both positive and negative. © Published under licence by IOP Publishing Ltd.

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